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EXAMINER
EWART, JAMES D

ART UNIT	PAPER NUMBER
2683	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/676,402	DAVIES, DOUGLAS ALLAN	
	Examiner	Art Unit	
	James D Ewart	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Objections

1. Claim 3 is objected to because of the following informalities: the term wireless communication signals is used in claim 1 to indicate downlink and then used again in dependent claim 3 to indicate uplink. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7, 9,10,14,15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (U.S. Patent No. 6,456,652) and further in view of Taylor et al (U.S. Patent No. 4,859,933) and further in view of McGill (U.S. Patent No. 6,285,339)

Referring to claim 1, Kim et al teaches a signal testing system for evaluating wireless communication signals transmitted between a base station and a communication site, said signal testing system comprising: an antenna located at said communication site for communicating said wireless communication signals between said base station and said communication site (Column 2, Lines 3-5) and a communication unit to measure characteristics of said wireless communication signals (Figure 1; 28 and Column 2, Lines 3-8 and Column 3, Lines 4-12), but does not teach an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of

said plurality of pan orientations and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements. Taylor et al teaches an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations (Column 6, Line 66 to Column 7, Line 1 and Column 10, lines 27-28) and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements (Column 7, Lines 4-8 and 21-23). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the teaching of Taylor et al of using an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements to vary the site conditions (Column 19, Line 20). Kim et al and Taylor et al teach the limitations of claim 1, but do not teach a plurality of tilt orientations; and a set tilt orientation of said plurality of tilt orientations. McGill teaches a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations (Column 1, Line 66 to Column 2, Line 4 and Figure 2). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al and Taylor et al with the art of McGill of a plurality of antenna tilt

orientations; and a set tilt orientation of said plurality of tilt orientations to position a load in a desired angular orientation (Column 2, Line 48-49).

Referring to claim 2, Kim et al further teaches wherein said testing system receives wireless communication signals sent downstream from said base station to said testing system (Figure 1), said antenna receives said wireless communication signals (Figure 1) and communication unit receives said wireless communication signals from said antenna (Figure 1) and measures characteristics of said wireless communication signals (Column 2, Lines 3-8).

Referring to claim 3, Kim et al further teaches wherein said testing system transmits wireless communication signals sent upstream to said base station from said testing system (Column 2, Lines 3-14 and Figure 1), said communication unit generates said wireless communication signals (Column 2, Lines 3-14 and Figure 1), said antenna transmits said wireless communication signals to said base station (Column 2, Lines 3-14 and Figure 1) and said communication unit measures characteristics of said wireless communication signals (Column 2, Lines 3-8).

Referring to claim 4, Kim et al further teaches wherein said communication unit comprises a signal measurement device to measure characteristics of said wireless communication signals communicated with said base station (Column 2, Lines 3-8); and a modem to process said wireless communication signals communicated with said base station (Figure 1).

Referring to claim 5, Kim et al teaches measuring the said wireless communication signals but does not teach wherein said signal measurement device is a signal analyzer integrating power signals around frequencies associated with said wireless communication signals. Taylor et al further teaches wherein said signal measurement device is a signal analyzer integrating power signals around frequencies associated with said wireless communication signals (Column 6, Lines 64-66). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the teaching of Taylor et al wherein said signal measurement device is a signal analyzer integrating power signals around frequencies associated with said wireless communication signals to measure signals at various spectral locations (Column 2, lines 44-46).

Referring to claim 6, Kim et al further teaches wherein said modem is a network interface unit (Figure 1 and Column 2, Lines 3-8). A modem is required to interface with a cellular network.

Referring to claim 7, Taylor et al further teaches wherein said communication unit further comprises a coupler connected to said antenna to direct said wireless communication signals and wherein said signal measurement device is connected to said coupler and said modem is connected to said coupler (Figures 9 and 10). It's obvious that Kim et al must provide a coupling between antenna, modem and test device as well.

Referring to claim 9, Kim et al further teaches wherein said testing system receives wireless communication signals sent downstream from said base station to said testing system (Figure 1), said antenna receives said wireless communication signals (Figure 1), said wireless communication signals are provided to said modem (Figure 1) and measuring the characteristics of said wireless communication signals (Column 2, lines 3-8), but does not teach using a signal analyzer unit. Taylor et al teaches using a signal analyzer unit (Column 6, Lines 64-66). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the art of Taylor et al of using a signal analyzer unit to measure signals at various spectral locations (Column 2, lines 44-46).

Referring to claim 10, McGill further teaches a controller to orient said mount in one of said plurality of pan orientations and one of said plurality of tilt orientations (Column 2, Lines 22-25).

Referring to claim 14, Kim et al teaches a signal testing system for evaluating wireless communication signals transmitted between a wireless testing system and a base station, said wireless testing system comprising an antenna for communicating said wireless communication signals with said base station (Column 2, Lines 3-5) and a communication unit to measure characteristics of said wireless communication signals (Figure 1; 28 and Column 2, Lines 3-8 and Column 3, Lines 4-12), but does not teach integrating power signals of said wireless communication signals across a frequency band associated with said wireless communication signal and an adjustable mount associated with said antenna for orienting said antenna in a

plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements. Taylor et al teaches integrating power signals of said wireless communication signals across a frequency band associated with said wireless communication signals (Column 6, Lines 64-66) and an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations (Column 6, Line 66 to Column 7, Line 1 and Column 10, lines 27-28) and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements (Column 7, Lines 4-8 and 21-23). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the teaching of Taylor et al of integrating power signals of said wireless communication signals across a frequency band associated with said wireless communication signals and using an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements to vary the site conditions (Column 19, Line 20). Kim et al and Taylor et al teach the limitations of claim 1, but do not teach a plurality of tilt orientations; and a set tilt orientation of said plurality of tilt orientations. McGill teaches a plurality of

antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations (Column 1, Line 66 to Column 2, Line 4 and Figure 2). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al and Taylor et al with the art of McGill of a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations to position a load in a desired angular orientation (Column 2, Line 48-49).

Referring to claim 15, Kim et al further teaches variably attenuating said wireless communication signals before evaluating said characteristics of said wireless communication signals to simulate ambient atmospheric and meteorological conditions around said wireless testing system (Figure 1, 14).

Referring to claim 17, Kim et al further teaches evaluating said characteristics of said wireless communication signals received by said wireless testing system from said base station (Column 2, Lines 3-8).

3. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al, Taylor et al, McGill and further in view of DeJaco et al (U.S. Patent No. 5,784,406).

Referring to claims 8 and 16, Kim et al further teaches wherein said modem generates wireless communication signals, wireless communication signals are provided to said antenna, said antenna transmits wireless communication signals and Taylor et al teaches a signal analyzer measures characteristics of said wireless communication signals, but they do not teach

transmitting said wireless communication signals back to said base station. DeJaco et al teaches transmitting said wireless communication signals back to said base station (Figure 1). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al, Taylor et al, McGill with the art of DeJaco et al of transmitting said wireless communication signals back to said base station to quantitatively evaluate the quality of communication channels (Column 3, Lines 65-67).

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al, Taylor et al, and McGill and further in view of Jackson (U.S. Patent No. 6,188,372)

Referring to claim 11, Kim et al, Taylor et al and McGill teach the limitations of claim 11, but do not teach a bracket attached to said antenna, said bracket allowing the positioning of said antenna at a plurality of angles along a plane to change a polarity of said wireless communication signals. Jackson et al teaches a bracket attached to said antenna, said bracket allowing the positioning of said antenna at a plurality of angles along a plane to change a polarity of said wireless communication signals (Column 1, Lines 11-14 and Column 2, Lines 38-45). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the teaching of Jackson et al of using a bracket attached to said antenna, said bracket allowing the positioning of said antenna at a plurality of angles along a plane to change a polarity of said wireless communication signals to provide the proper polarity plate without requiring the attachment of additional reference hardware (Column 2, Lines 30-31)

5. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al, Taylor et al, and McGill and further in view of Kim et al.

Referring to claims 12 and 13, Kim et al teaches said communication unit measuring said wireless communication signals, but does not teach said communication unit includes an attenuator in to selectively attenuate said wireless communication signals to produce attenuated signals simulating attenuating effects of ambient atmospheric and meteorological conditions around said communication site. Kim et al teaches base station includes an attenuator in to selectively attenuate said wireless communication signals to produce attenuated signals simulating attenuating effects of ambient atmospheric and meteorological conditions around said communication site (Figure 1, 22). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the teachings of Kim et al of using an attenuator in to selectively attenuate said wireless communication signals to produce attenuated signals simulating attenuating effects of ambient atmospheric and meteorological conditions around said communication site to simulate environmental noise conditions (Column 2, Lines 51-52).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al, Taylor et al, and McGill and further in view of Heuer (U.S. Patent No. 5,663,968) and even further in view of Kim et al.

Referring to claim 18, Kim et al teaches a method of simulating ambient atmospheric and meteorological conditions for a wireless communication system using a wireless testing system,

(although Kim et al teaches the applying attenuation at the base station, it could just as well be accomplished at the mobile station) said wireless testing system comprising an antenna for communicating said wireless communication signals with said base station, a signal measuring device associated with said antenna and evaluating characteristics of said wireless communication signals transmitted by said base station and received by said signal measuring device; calculating said atmospheric and meteorological conditions corresponding to said amount of attenuation based on the distance between said antenna and said base station (Column 2, Lines 49-60 and Column 4, Lines 52-57); and comparing said calculations of said atmospheric and meteorological conditions to a predetermined threshold level required to maintain a level of service required for communications with said base station when said atmospheric and meteorological conditions exist wherein, if said level of attenuation exceeds said threshold level, said antenna placement at said communication site is acceptable (Column 5, Lines 1-10), but does not teach an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements. Taylor et al teaches an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations (Column 6, Line 66 to Column 7, Line 1 and Column 10, lines 27-28) and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements

(Column 7, Lines 4-8 and 21-23). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the teaching of Taylor et al of using an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations, wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations and an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements to vary the site conditions (Column 19, Line 20). Kim et al and Taylor et al teach the limitations of claim 1, but do not teach a plurality of tilt orientations; and a set tilt orientation of said plurality of tilt orientations. McGill teaches a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations (Column 1, Line 66 to Column 2, Line 4 and Figure 2). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al and Taylor et al with the art of McGill of a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations to position a load in a desired angular orientation (Column 2, Line 48-49). Kim et al, Taylor et al, and McGill teach the limitations of claim 18, but do not teach attenuating said wireless communication signals until said signal measuring device no longer receives said wireless communication signals. Heuer teaches attenuating said wireless communication signals until said signal measuring device no longer receives said wireless communication signals (Column 2, Lines 15-21). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al, Taylor et al, and McGill with the teaching of Heuer of attenuating said wireless communication signals until said signal measuring

device no longer receives said wireless communication signals to determine a threshold setting corresponding to a failure level (Column 2, Lines 42-45). Kim et al, Taylor et al, McGill and Heuer teach the limitations of claim 18, but do not teach attenuation occurs at said communication site. Kim et al teaches attenuation occurs at said communication site / base station (Figure 1, 22). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al, Taylor et al, McGill and Heuer with the teachings of Kim et al of using an attenuator at the communication site to simulate environmental noise conditions (Column 2, Lines 51-52).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bai et al. U.S. Patent No. 6,262,687 discloses tracking antenna and method.

Bernardin U.S. Patent No. 6,052,583 discloses methods and systems for selecting drive routes for testing RF coverage in a radiotelephone system.

Bernardin et al. U.S. Patent No. 6,041,236 discloses method and apparatus for minimizing the number of samples needed to determine cell area coverage reliability in a radiotelephone system.

Dean U.S. Patent No. 6,201,802 discloses method and apparatus for analyzing base station timing.

Evans U.S. Patent No. 4,553,145 discloses method of forming the far-field beam pattern of an antenna.

Frostrom et al. U.S. Patent No. 5,465,393 discloses simulated air interface system for simulating radio communication.

Gutowski U.S. Patent No. 2002/0058503 discloses path loss data normalization for growth management of a cellular system.

Issler U.S. Patent No. 6,031,498 discloses antenna pattern measurement method and device.

Jang U.S. Patent No. 6,282,408 discloses apparatus and method for measuring air interference of a base station.

Jensen et al. U.S. Patent No. 6,405,043 discloses method to characterize the prospective or actual level of interference at a point, in a sector, and throughout a cellular system.

King U.S. Patent No. 6,538,612 discloses satellite locator system.

Kim U.S. Patent No. 5,978,659 discloses radio characteristic evaluating apparatus of mobile telecommunication device.

Kuhn et al. U.S. Patent No. 6,512,788 discloses RF output spectrum measurement analyzer and method.

Lim et al. U.S. Patent No. 6,466,547 discloses system and method for optimizing forward power control in a personal communication service (PCS) code division multiple access (CDMA) system using a laboratory test.

Matthews U.S. Patent No. 5,419,521 discloses three-axis pedestal.

Niemela U.S. Patent No. 5,978,675 discloses method and measuring the noise level of a base station environment.

Palmer U.S. Patent No. 6,253,065 discloses wireless communication network planning.

Rossi et al. U.S. Patent No. 6,239,767 discloses universal communications system for space applications.

Sant et al. U.S. Patent No. 6,169,896 discloses system for evaluating communicatioin network services.

Toland et al. U.S. Patent No. 5,673,057 discloses three axis beam waveguide antenna.

Vambaris et al. U.S. Patent No. 5,930,707 discloses system for remotely testing a cellphone base station.

Wallace U.S. Patent No. 6,255,996 discloses efficient antenna system for a personal communication device.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D Ewart whose telephone number is (703) 305-4826. The examiner can normally be reached on M-F 7am - 4pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703)308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-9508 for regular communications and (703)305-9508 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Ewart
June 3, 2003

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